

# Vegetation Management Plan

*2011 - 2015*



*department of Conservation and Recreation*

The following Vegetation Management Plan (VMP) has been developed to ensure compliance with Rights-of-Way Management Regulations (333 CMR 11.00).

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## **IDENTIFICATION AND QUALIFICATIONS OF APPLICANT**

### **DCR Division of Urban Parks**

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In his capacity as a Landscape Architect II with the Planning and Engineering Department of the Massachusetts Department of Conservation and Recreation, Mr. Thurlow is responsible for the contract, planning, design, and implementation of the Vegetation Management Plan for the Massachusetts Department of Conservation and Recreation North and South Districts.

## **PLAN AUTHOR AND QUALIFICATIONS**

This plan has been developed by Mark Lacombe, Project Manager at Northern Tree Service:

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Mr. Lacombe has a B.S. degree in Forestry from the University of Massachusetts. He has worked in the landscape industry since 1981 and is a MA Certified Commercial Pesticide Applicator.

### **STATEMENT OF OBJECTIVES:**

This Vegetation Management Plan (VMP) is intended to establish the criteria whereby the Massachusetts Department of Conservation and Recreation controls vegetation in their Park properties in compliance with the Rights of Way Management Regulations (333 CMR 11.00) as promulgated by the Massachusetts Department of Agricultural Resources. The plan was developed in accordance with the revised 333 CMR 11.00 Right of Way Management Regulations effective September of 2005 and revised in March of 2007.

The primary objective of the VMP is to provide safe and aesthetically pleasing park grounds and maintain the integrity of the park infrastructure. Management of vegetation is an important element of park maintenance for safety and aesthetic purposes. Other objectives include pest control, provisions of habitat, and stabilization of embankments and other areas prone to erosion. Vegetation encroaching on public parkways, roads, sidewalks, paths, and trails creates hazardous conditions for the general public including, but not limited to, blocking access, hiding signs and guard rails, limiting line of sight, noxious weed hazards, restricting drainage and deteriorating road and trail beds. Park land that is affected by invasive weeds sees bio-diversity threatened and lost habitat for rare and endangered species due to the overgrowing vegetation.

When vegetative growth threatens the safety and comfort of the general public or maintenance personnel, or endangers environmental quality, the Massachusetts Department of Conservation and Recreation is charged with the responsibility of initiating vegetation management procedures to remedy the condition(s).

To achieve this, The Department of Conservation and Recreation will implement an Integrated Vegetation Management Program (IVMP). The key components of this strategy are:

- Determine the target vegetation
- Determine the best control methodology and practices
- Develop operational guidelines

Control methods shall include mechanical, chemical, cultural, biological controls. It shall be a goal of the VMP to minimize the use of chemical controls by minimizing the areas of application, the quantity of chemicals, and the frequency of applications.

Chemical control techniques shall be limited and only used where areas are inaccessible to mechanical control methods. Additionally, over the 5-year period, the Massachusetts Department of Conservation and Recreation will monitor and evaluate the success of the program and integrate appropriate new methods into the VMP and Yearly Operational Plans (YOP).

## **DESCRIPTION OF TARGET VEGETATION:**

Massachusetts Department of Conservation and Recreation personnel will inventory park properties and develop priorities and strategies for control of target vegetation. These areas will be identified and mapped on the basis of safety, and significance of vegetation conditions. Early identification and timely removal of unwanted species is the easiest, most effective, and least costly method of vegetation control, both in terms of economic and environmental impacts. From a parks operations standpoint, target vegetation falls into one or more of the following categories: hazard vegetation, detrimental vegetation, nuisance vegetation, and invasive vegetation.

From a vegetation management standpoint, target vegetation will be one or more of the following types: annual and perennial grasses and weeds, low-growing woody shrubs and vines, and tall growth (trees). Additionally, some target vegetation may be determined to be persistent and invasive, meaning that the vegetation will proliferate and re-sprout when removed by mechanical means.

- **Hazard Vegetation:** This category includes vegetation obscuring sightlines, creating obstacles to signs or vehicular movement, posing windfall hazard over vehicular or pedestrian ways, or creating winter shade leading to icing conditions. In some instances conifers may present a hazard. In the winter, shadows cast on roadways and walks by conifers can delay melting (especially in “low salt” areas) resulting in possibility of hazardous road and/or sidewalk conditions and an increase in the amount of de-icing chemicals (road salt) applied.

- **Detrimental Vegetation:** This category comprises grasses and woody plants that are destructive to or compromise the function of roads, parking lots, sidewalks including grasses in pavement joints, medians barriers and traffic islands, as well as vegetation growing in and along drainage structures thus compromising drainage ways. The negative drainage impact of vegetation can create storm water accumulation and potentially hazardous icing conditions in winter months.

- **Nuisance or Noxious Vegetation:** This category includes any vegetation growing on Park lands that could potentially cause problems to the general public and/or Massachusetts Department of Conservation and Recreation employees or contractors maintaining the ROW. The overwhelming plant material to be controlled in this instance is Poison Ivy (*Toxicodendron radicans*). Poison Ivy and other nuisance vegetation growing within 30 feet of the edge of pavements or site features, a drainage structure or swale, or other structures and appurtenances requiring maintenance, within ROW, will be considered target vegetation.

- **Invasive Vegetation:** Some areas of park land have become infested with invasive plant species. Invasive vegetation typically consists of introduced plants that have spread from gardens and agricultural areas into the wild, where they pose problems for the natural

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environment. While not all invasive plants are non-native and not all introduced species become invasive. But typically, invasive plants are non-native, and generally there are no local diseases or pests to control them. Invasives reproduce and spread quickly, and thrive in disturbed conditions, outcompeting and displacing native species. This reduces biodiversity, because as the native plants disappear, so also do the insects and animals which depend on them for food and habitat.

Working with input from environmental agencies and academic and technical resource institutions such as the University of Massachusetts Extension Service, The Department of Conservation and Recreation will seek opportunities to remove invasive material and to encourage growth of native species. Specific target invasive plants include but are not limited to Tree of Heaven (*Ailanthus altissima*), Japanese Knotweed (*Polygonum cuspidatum*), Multiflora Rose (*Rosa multiflora*), Oriental Bittersweet (*Celastrus orbiculatus Thunb.*), and Russian Olive (*Eleagnus angustifolia*). Reference and definition for invasive plants shall be as posted on <http://www.massnrc.org/MIPAG/>. Nuisance vegetation such as Poison Ivy creates a public safety hazard to workers & pedestrians.

### **INTEGRATED VEGETATION MANAGEMENT CONTROL SUMMARY & METHODS**

The Department's IVMP methods incorporate **cultural practices** (active planting to encourage appropriate competing vegetation, non-organic barriers), **mechanical control** (mowing, hand cutting, selective trimming) and **chemical control** (low volume foliar herbicide treatments and basal or cut-stump treatment.) Each one of these methods has benefits and impacts, and each by itself will not work effectively for long term vegetation management. When these methods are integrated, they complement one another in terms of both effectiveness and minimization of environmental impacts. The methods listed above will be chosen by Department of Conservation and Recreation personnel familiar with the right of way, based on a variety of factors including, but not limited to, location, environment, terrain, and public/employee safety. The method chosen for a given vegetation problem will attempt to achieve a long term, low maintenance vegetation management program through the encouragement of stable plant communities when applicable. The mechanical and chemical control(s) chosen for a given vegetation problem will attempt to achieve a long term, low maintenance vegetation management program to achieve an ecologically sound program.

#### **Cultural Practices:**

A key aspect of the VMP is the development of the park land through construction and renovation/improvement projects. The goal of these projects is the creation of sustainable low-maintenance landscapes that preserve and protect the natural and cultural resources of the Parks.

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Measures to be implemented include:

- options for reducing mowing frequency as an economic way of establishing naturalized roadside environments, while meeting operational safety requirements.
- refining seeding and planting specifications with a goal of establishing self-sustaining/low maintenance plantings.
- eliminating the use of invasive species in new plantings.
- use of native plant species to encourage biodiversity.

### **Mechanical Control:**

1. **Hand Cutting:** the mechanical cutting of target species using hand saws, chain saws and brush saws. Target species are cut as close to the ground as practical with stump heights usually not exceeding three inches. Hand cutting is used to remove hazard trees, protect environmentally sensitive sites and remove target vegetation greater than twelve feet tall where herbicide use is prohibited by regulation. Hand cutting is also used on sites where terrain, target species size or sensitivity renders mowing impossible or impractical. Hand cutting may be used at any time of the year.

2. **Mowing:** the mechanical cutting of target vegetation using machines including homeowner type push mowers, large ride-mowers, an offset flail mower, brush mowers, edgers and/or trimmers. Selection of specific equipment is based on terrain, target vegetation size and equipment availability. Mowing is used in most areas where terrain and target stem size permit efficient use of the equipment and in areas where herbicide use is prohibited by regulation. Mowing is the principle vegetation control measure on grassy areas. Mowing may be used at any time of the year except when deep snow precludes operations.

3. **Selective Pruning:** the mechanical pruning of the tops or encroaching limbs of tall trees which may cause a hazard or hamper access to the public way. This trimming will be accomplished using aerial lifts mounted on trucks or tractors or, if terrain or obstructions prevent equipment access, by climbing crews. Selective pruning may be done at any time of the year and may provide a viable alternative to the removal of trees.

### **Chemical (Herbicide Applications) Control:**

1. **Foliar Treatments:** the selective application of herbicides diluted in water, to the foliage of target vegetation. Two types of equipment for foliar treatments are used: Low volume and high volume. Both treatments use low pressure, below 60 psi at the nozzle, for applications. Foliar applications take place when leaves are fully developed in the spring until early fall when leaves begin dropping off the trees.

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a. **Low pressure foliar treatments** using a hand pump, motorized sprayer or squirt bottles. The herbicide solution is applied to lightly wet the target plant, not to the point of run-off. This technique is excellent for spot treatments, such as localized Poison Ivy infestations. It is not effective on tall, high density target vegetation.

b. **Low pressure foliar treatments** using a truck or tractor mounted application equipment that delivers the herbicide solution through nozzles attached to a hose or boom-mounted equipment. The herbicide solution is sprayed to thoroughly wet the target vegetation using a water based herbicide mixture from a tank and pump on the application vehicle. This technique is used along roadways that have good access and where obstructions, terrain or site sensitivity do not exclude the equipment. This includes the use of a WeedSeeker® Low pressure hydraulic pump boom: A photoelectric vegetation sensing sprayer that only sprays green vegetation from a boom as it drives.

2. **Anti-drift Adjuvants** are added to the mix or solution in all foliage and pre-emergent applications because they help reduce the potential exposure to non-target organisms, reduce the break-up of sprays into fine droplets and increase selectivity and herbicide deposition onto target plants.

3. **Cut Stump Treatment (CST):** the mechanical cutting of target species followed by an herbicide treatment to the phloem and cambium tissue of the stumps. CST treatments prevent re-sprouts, thereby reducing the need to re-treat the same vegetation. The CST mixture is diluted in water or a non-freezing agent and is ideally made to freshly cut stumps. Application equipment includes low-volume, backpack, hand-pump sprayers, hand held squirt bottles, paintbrushes, or sponge applicators. This method is used where maximum control is desirable, to reduce the visual impact of vegetation management treatments and/or to reduce the potential of adverse impacts to desirable vegetation because of its selectivity. CST may be used at any time of the year provided snow depths do not prevent cutting the stumps below three inches in height. It is best to avoid during the season of high sap flow, or in moderate to heavy rains. It is not practical in moderate to heavy stem densities.

4. **Basal Treatment:** the selective application of an herbicide, diluted in specially formulated oil, to wet the entire lower twelve to eighteen inches of the main stem of target plants. Using a hand pump backpack unit, the oil enables the herbicide solution to penetrate the bark tissue and translocate within the plant. Basal treatments are extremely selective and used when vegetation density is low and in areas where extreme selectivity is necessary. For public way treatments it is primarily an option for invasive species control. It can be used any time of year except when snow is too deep, in extremely wet weather and/or during spring sap flow.

**5. Plant Growth Regulators/Broadleaf Control (PGR):** the selective application of herbicides to slow down the growth of grasses and remove broadleaf plant species. The principal use of this treatment method is to control broadleaf plant species— many of which are invasive or nuisance plants—where they are out-competing desirable grasses despite regular mowing on sites such as road side embankments. PGR treatments have the advantage of controlling the target broadleaf species without damaging the desirable grass species. They are used in the same time frame as foliar treatments, using the same types of equipment.

## **JUSTIFICATION OF HERBICIDE USE**

The long-term goal for every VMP is to reduce the need for vegetation management. To that goal The Massachusetts Department of Conservation and Recreation will implement an integrated approach to vegetation management by encouraging plant communities that hinder the development of target vegetation. This program will utilize cultural, mechanical and chemical methods to control vegetation and will address public, environmental, employee safety and economic concerns by minimizing reliance on herbicides. At the present time there is no environmentally, economically feasible and safe ROW management program that eliminates the use of herbicides altogether. In particular, guardrails, medians and traffic islands and rough terrain conditions present conditions unsafe for hand-cutting and mowing operations. Additionally, many of the species growing in these conditions are invasive and persistent, and cannot be adequately controlled without chemical treatment. Nuisance plants, Poison Ivy in particular, are not only invasive and persistent, but present a potential health hazard to mechanical equipment operators, as well as the general public. In addition, under certain conditions, the Department may also use herbicides to remove persistent invasive vegetation as part of a larger effort to establish sustainable and/or native plant species. Consequently, public and occupational safety considerations require judicious use of chemical controls.

## **HERBICIDE APPLICATION METHODS**

The Department of Conservation and Recreation will utilize three methods of herbicide application: foliar treatment, cut stump and basal stem treatment. Chemical foliar treatments involve the selective application of approved herbicides and adjuvant diluted in water, to the foliage and stems of the target vegetation. The foliar treatment used shall be low pressure, below 60 psi at the nozzle, with a normal working pressure of 40 psi for application at volumes of less than 40 gallons/acre.

Low pressure nozzles will be used to produce the largest possible droplet size and a drift control agent shall be added at the rate recommended on the label to keep spray drift to an absolute minimum. Experience indicates minimal drift occurs when using low- pressure applications with drift control agent.

## **IDENTIFYING AND PROTECTING SENSITIVE AREAS**

Sensitive areas are defined as areas within rights-of-way in which public health, environmental or agricultural concerns warrant special protection to further minimize risks of unreasonable adverse effects (of herbicides). These include public groundwater supplies, public surface water supplies, private drinking water supplies, surface waters, wetlands, rivers, inhabited areas and agricultural areas. These sensitive areas can be separated into two categories:

- areas that are readily identifiable in the field
- areas that are not readily identifiable in the field.

A significant amount of effort is applied to locating and delineating sensitive areas. Sensitive areas that are not readily identifiable in the field include public groundwater supplies, private water supplies and public surface water supplies. Sources available to identify these areas include:

- Massachusetts Department of Environmental Protection (DEP) Water Supply Maps (1:25,000); delineating the perimeter of public watersheds and the location of public wells.
- Massachusetts DEP Wetland Conservancy Maps (scale 1:1,000).
- Municipal maps and records.
- Regional Planning Agency maps and records.
- U.S. Fish and Wildlife Service National Wetlands Inventory Maps, available from the University of Massachusetts, Cartographic Information Research Services in Amherst.
- Conservancy Program & Ortho Photo and Information - Massachusetts DEP (1:5000).
- Identification of public and private well locations will be requested in writing from the Board of Health in each community where herbicide applications are proposed.
- Natural Heritage and Endangered Species Program
- Massachusetts Department of Fish and Game

Sensitive areas that are readily identifiable in the field include surface waters, wetlands, rivers and agricultural areas. The method utilized to identify these sensitive areas will be as follows:

- Consult EOEEA Mass GIS spatial data maps to locate any of these sensitive areas that may already be identified on these maps.
- Prior to commencement of herbicide application operations, the treatment crew will be provided the marked topographic maps and detailed spray sketches.
- The treatment crew will visually survey the area to be treated for any additional sensitive areas (e.g. catch basins with or drainage ditches with standing water not shown

on plans) as well as areas where the ground is bare or has limited re-growth from previous herbicide applications. The following is the procedure to be followed to identify sensitive areas will for required protection:

- Consult the appropriate reference materials and sources to determine the precise location of these areas.
- Place the boundaries of these sensitive areas on U.S. Geological Survey (USGS) topographical maps, CAD (Computer Aided Drafting) drawings or GIS output.
- Prior to commencement of herbicide application operations, Department of Conservation and Recreation personnel will install permanent color-coded plastic delineators to mark the boundaries of the spray and no spray zones. In addition, the treatment crew will be provided with a copy of the Yearly Operational Plan, the marked up topographic map, and CAD sketch drawings with which to identify the boundaries of these sensitive areas.
- The Department of Conservation and Recreation will deploy a qualified point person in advance of the main herbicide application operation to identify the delineation markers and boundaries of the appropriate buffer zone. In addition, point person will be responsible for identifying otherwise unmapped sensitive areas requiring restriction. Information collected by point person will then transmitted in advance to the treatment crew. This communication will ensure that only the appropriate areas are treated and will minimize the chance of mistakes.

### **SENSITIVE AREA RESTRICTIONS**

Sensitive Areas are defined as Limited Spray Area and No Spray Areas within rights-of-way in which public health, environmental, or agricultural concerns warrant special protection to further minimize risks of unreasonable adverse effects of herbicides:

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**Sensitive Area Restriction Guide (333 CMR 11.04)**

<b>Sensitive Area</b>	<b>No Spray Zone</b>	<b>Limited Use Zone</b>	<b>Where Identified</b>
Wetlands and Water Over Wetlands	Within 10 feet (unless provisions of 333 CMR 11.04(4)(c) are followed)	10 – 100 feet; 12 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	YOP Maps and identify on site
Certified Vernal Pool	Within 10 feet	10 feet to the outer boundary of any Certified Vernal Pool Habitat; 12 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	YOP Maps and identify on site
Public Ground Water Supply	Within 400 feet (Zone I)	Zone II or IWPA (Primary Recharge Area); 24 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	YOP Maps
Public Surface Water Supply	Within 100 feet of any Class A public surface water source	100 feet to the outer boundary of the Zone A; 24 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	YOP Maps
	Within 10 feet of any tributary or associated surface water body located outside of the Zone A	10 feet to the outer boundary of the Zone A; 24 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	
	Within 100 feet of any tributary or associated surface water body located within the Zone A of a Class A public surface water source		
	Within a lateral distance of 100 feet for 400 feet upstream of any Class B Drinking Water Intake	Within a lateral distance of between 100 -200 feet for 400 feet upstream of intake; 24 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	
Private Water Supply	Within 50 feet	50 – 100 feet; 24 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	In YOP well list and identify on site
Surface Waters	Within 10 feet from mean annual high-water line	10 feet from the mean annual high water line and the outer boundary of the Riverfront Area; 12 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	YOP Maps and identify on site
Agricultural and Inhabited Areas	N/A	0 – 100 feet 12 months must elapse between application; Selective low pressure, using foliar techniques or basal or cut-stump applications.	Identify on site
State-listed Species Habitat	No application within habitat area except in accordance with a Yearly Operational Plan approved in writing by the Division of Fisheries and Wildlife		YOP Maps

## **OPERATIONAL GUIDELINES FOR HERBICIDE APPLICATORS**

As required by regulation, there must be one individual onsite with a current Massachusetts Pesticide Certification in Rights-of-Way (Category 40) issued by the Department of Agricultural Resources. Other applicators must hold at a minimum a Massachusetts Pesticide Applicator License. applicators to ROW must hold a valid pesticide certification from the Department of Agricultural Resources. In addition to the applicable rules and regulations, applicators will adhere to the following operational guidelines:

**Weather** - Herbicide application will be restricted during certain adverse weather conditions, such as rain or wind. Scheduling of spray operations will be attentive to forecast conditions. Herbicide applications will not be made during periods of moderate or heavy rainfall. Foliar applications are effective in light mist situations. However, any measurable rainfall that creates leaf runoff will wash the herbicide off the target plant. If foliar applications are interrupted by unexpected rainfall, the treatment will not resume until the rain ends and active leaf runoff has ceased. Excessive wind can create drift during foliage applications causing damage to desirable vegetation. To minimize off target drift, the applicator will comply with the following restrictions:

- The applicator will monitor wind conditions to insure that there is no significant movement of the herbicide. If the applicator can see the herbicide moving off target, the application will immediately stop until the wind has subsided enough to permit further application.
- All herbicide solutions to be used for a foliar application will contain anti-drift agents. Anti-drift agents will be added to the foliage herbicide solutions as per the anti-drift agent label. In moderate wind conditions, as per label recommendations, more anti-drift agent may be added, at the discretion of the applicator to control increased drift.
- Foliar treatments will not be made to target vegetation that exceeds approximately twelve feet in height.

**Equipment Calibration** – Low-pressure foliar application equipment will be calibrated to maintain pressure not exceeding 60 pounds per square inch at the nozzle. The equipment will be calibrated and a Spray Controller will be used to deliver a consistent flow rate of approximately 40 gallons/Acre. For boom applications the boom will be kept as low as possible to reduce the drift hazard and a drift control additive will be included in the spray formulation to increase droplet size and give a uniform distribution of spray material.

## **MITIGATION MEASURES & RECORD KEEPING**

**Monitoring and Record Keeping** – An inventory of all properties will be taken, with information on the prevailing type of vegetation, terrain condition(s) and current maintenance practice(s) included. Treatments will be identified that promote the goals of the program. The

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decision to use one of the vegetation control techniques described above will depend on evaluation of the specific property and location. The goal of the control method will be to establish an easily maintainable, stable plant population that will not interfere with pedestrians and land use. Emphasis will be given to the control method that will address the vegetation problem in the most environmentally sound manner and in a way to minimize vegetation control in the long term. Quality assurance will include routine inspections by Department of Conservation and Recreation personnel with representation from the D.A.R. Pesticide Board to approve equipment, materials, and application procedures. Monitoring will include project record keeping to maintain information on the nature, timing, and location of actions taken, including project location, weather conditions, miles completed, amount of material used, worker and equipment hours devoted to the project, personnel responsible for activity and follow-up evaluation. Chemically treated areas shall be monitored after the herbicide(s) are applied to determine the effectiveness of the applications and to monitor any off target injury and drift of the spray solution. The Department will conduct training for district staff in methods of vegetation management, employee safety and record keeping. The contact person for the Massachusetts Department of Conservation and Recreation is:

- Matt Thurlow, Landscape Architect II, Boston – tel #: (617) 626-4944

## **ALTERNATIVE LAND USE OPTIONS**

The Department of Conservation and Recreation will continually review and evaluate new and innovative alternative land uses within its ROW. However, specific criteria must be met for adoption of alternative land use options. The alternative land use option must control the undesirable vegetation in a similar manner, as ecologically and efficiently as outlined in the VMP. The DCR infrastructure consists mostly of established roadways, paths, and public facilities. The basic management goal is to protect the public and this infrastructure from the effects of undesirable vegetation. As a result, the treatment areas are relatively small in area. Utilizing alternative land use strategies would be very difficult in this application. However, the DCR will review and consider any cost effective strategy that may develop.

## **REMEDIAL PLAN TO ADDRESS SPILLS AND RELATED ACCIDENTS**

All mixing and loading of herbicides will occur at Department of Conservation and Recreation storage facilities in amounts of herbicide necessary to carry out that day's work. This will minimize waste and the need of excess handling. The spray vehicle will be equipped with a clipboard log of the herbicides on board, a bag of adsorbent, activated charcoal, plastic bats, a broom and a shovel in case of a minor spill. Major Spills and Related Accidents - For the purpose of this VMP, major spills involve reportable quantities of hazardous materials as defined by the Department of Environmental Protection (DEP) 320 CMR 40.000. Related accidents include fire, poisoning and automobile accidents.

**Guidelines for Responding to a Spill:**

- a) Administer proper first aid and call an ambulance and/or Massachusetts Poison Information Center for cases involving injury due to poisoning.
- b) Call the police and/or fire department in cases involving automobile accidents or fire.
- c) If possible, control the spill by stopping the leak or source of spill.
- d) Confine the spread of liquids with a dike composed of soil or other absorptive materials.
- e) Call ChemTrec, Massachusetts Pesticide Bureau or chemical manufacturer for assistance (see phone listing below) if unable to handle the spill or the material is unfamiliar.
- f) Notify the DEP if water bodies are contaminated, and for releases or threatened releases of reportable quantities of hazardous material.
- g) Notify the District Hazardous Material Coordinator.
- h) Clean up the spill:
  - 1) If the spill occurs in a public location, isolate the spill areas and prevent unauthorized entry until cleanup is complete.
  - 2) Absorb spilled liquids with sand, absorptive clay, spill control gel, vermiculite, pet litter, sawdust or other absorptive material. Wear proper protective clothing and equipment.
  - 3) Sweep or shovel contaminated absorbent into a leak proof, sealable container for proper disposal.
  - 4) Dry herbicides, such as dust, granular and pellets can be directly swept or shoveled into leak proof sealable containers without absorptive materials.
  - 5) Neutralize contaminated area with hydrated lime, sodium hypochlorite (bleach), or soapy water. Never mix bleach and ammonia base products or a poisonous gas will result.
  - 6) Dispose of contaminated material at an approved location.

**Minor Spills -** Minor spills involve less than reportable quantities of hazardous materials:

- a) In case of contact with herbicides, wash with plenty of soap and water. Administer proper first aid and see a doctor, if necessary.
- b) Change clothing which has absorbed herbicides.
- c) Clean up spill. (Same as above for major spills).

In the event of a spill, information on safety precautions and clean up procedures may be gathered from the following sources:

- Herbicide label
- Herbicide MSDS sheet
- Herbicide Manufacturers:  
Dow (517) 636-4400

Dupont (800) 441-3637

Monsanto (314) 694-4000

BASF (800) 832-4357

- Massachusetts DAR - Pesticide Bureau (617) 626-1700
- Massachusetts DEP Incident Response Unit (888) 304-1133
- ChemTrec (800) 424-9300
- Massachusetts Poison Control Center (800) 682-9211
- Massachusetts Department of Public Health  
Bureau of Environmental Health  
Environmental Toxicology Program (617) 624-5757

## **HERBICIDE ALTERNATIVES**

The Department of Conservation and Recreation remains committed to finding effective alternatives to herbicide use. To date no effective alternative to conventional herbicides has been developed or proven to provide superior control in right of way applications. The Department has made every effort to minimize herbicide use and seek effective alternatives to chemical control.

## **EVALUATION AND RECOMMENDATIONS**

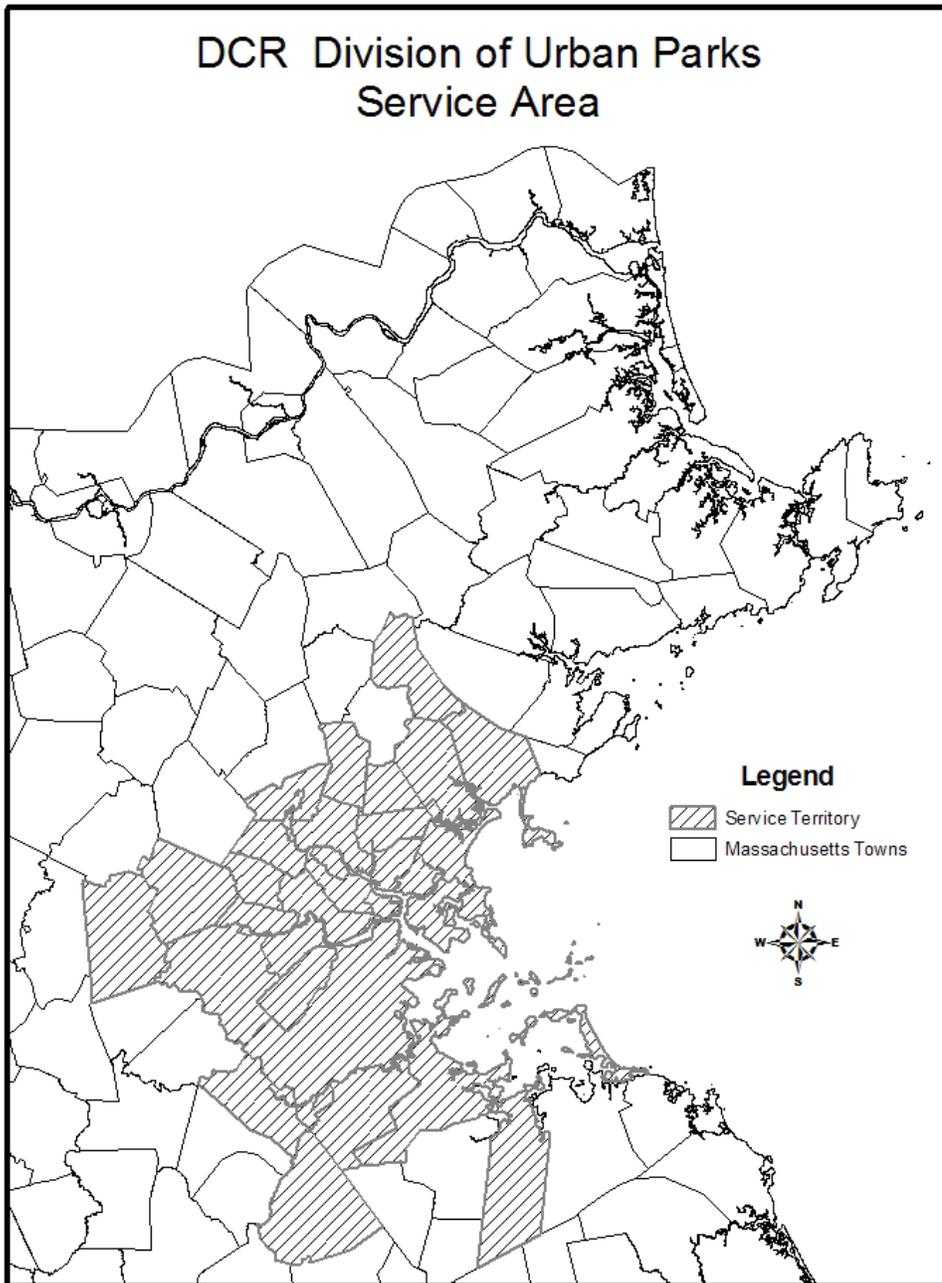
On an annual basis, The Department of Conservation and Recreation will evaluate the success of the vegetation management program. This evaluation will include reporting of control measures by location, as well as the quantities of herbicides used and total area treated. In addition, the overall condition of the area will be evaluated and recommendations for reducing mechanical and/or chemical controls will be made.

## **APPENDIX A**

### List of DCR towns

Arlington  
Belmont  
Boston  
Brookline  
Cambridge  
Canton  
Chelsea  
Dedham  
Everett  
Hull  
Lynn  
Lynnfield  
Malden  
Melrose  
Medford  
Milton  
Nahant  
Needham  
Newton  
Quincy  
Revere  
Saugus  
Somerville  
Stoneham  
Waltham  
Watertown  
Wellesley  
Weston  
Weymouth  
Winchester  
Winthrop

**APPENDIX B**  
System Map



## **APPENDIX C**

### **Sensitive Site Buffers**

Sensitive Areas, shall refer to any areas, within rights-of-way, including but not limited to the following, in which public health, environmental or agricultural concerns warrant special protection to further minimize risks of unreasonable adverse effects:

- (a) within the primary recharge area of a public drinking water supply well;
- (b) within 400 feet of any surface water used as a public water supply;
- (c) within 100 feet of any identified private drinking water supply well;
- (d) within 100 feet of any standing or flowing water;
- (e) within 100 feet of any wetland;
- (f) within 100 feet of any agricultural or inhabited area.

**APPENDIX D**

**Rights-of-Way Sensitive Area Materials List**

<b>Active Ingredient</b> <i>Use</i> <i>Restrictions</i>	<b>Product Names (EPA #)</b> <i>Registrant</i>	
<b>Glyphosate</b> <i>Lowest Labeled Rate for all Glyphosate products</i>	<b>Round Up Pro (524-475)</b> <i>Monsanto</i>	<b>Glypro-Plus (62719-322)</b> <b>Accord Concentrate (62719-324)</b> <i>Dow AgroSciences</i>
<b>Razor (228-366)</b> <b>Razor-Pro (228-366)</b> <b>Riverdale AquaNeat Aquatic Herbicide (228-365)</b> <i>Nu Farm Americas</i>		
<p>While Accord Concentrate, Rodeo, Glyphosate VMF and Aquaneat all have aquatic uses, approval for their use as sensitive materials does NOT mean that they can be used for aquatic weed control, or directly applied to water, as part of a rights of way management program. Products are subject to the no-spray and limited spray provisions of 333 CMR 11.04.</p>		
<b>Metsulfuron Methyl</b> <i>Lowest Labeled Rate for all Metsulfuron Methyl Products*</i>	<b>Escort XP (352-439)</b> <i>EI Dupont</i>	<b>Patriot Selective Herbicide, (228-391)</b> <i>Nu Farm Americas</i>
<b>Sulfometuron Methyl</b> <i>Lowest Labeled Rate for all Sulfometuron-Methyl Products*</i>	<b>Oust XP (352-601)</b> <i>EI Dupont</i>	<b>Riverdale Spyder Herbicide, (228-408)</b> <i>Nu Farm Americas</i>
<b>Metsulfuron Methyl</b> <b>Sulfometuron Methyl</b> <i>Lowest Labeled Rate*</i>	<b>Oust Extra (352-622)</b> <i>EI Dupont</i>	
<b>Ammonium Salt of Fosamine</b> <i>Lowest Labeled Rate*</i>	<b>Krenite S (352-395)</b> <i>EI Dupont</i>	

<p><b>Imazapyr</b>  3 pints/acre every  3<sup>rd</sup> year OR  2 pints/acre every  other year  for all Imazapyr  Products</p>	<p><b>Arsenal (241-346)</b>  <b>Arsenal Powerline (241-431)</b>  <b>Arsenal Railroad Herbicide</b>  <b>(241-273)</b>  BASF</p>	<p><b>POLARIS HERBICIDE</b>  (228-534)  NU FARM AMERICAS</p>
<p><b>Triclopyr,  Butoxy Ethyl  Ester</b>  The lowest of the  following rates:  1. Between 10  feet and 50 feet  of the resource:  Lowest labeled  rate* or  0.5 pints per acre</p> <p>2. Between 50  feet and the  boundary of the  limited spray  zone: Lowest  labeled rate* or  3 pints per acre</p>	<p><b>Garlon 4 (62719-40)</b>  Dow AgroSciences  <b>Garlon 4 Ultra (62719-527)</b>  Dow AgroSciences</p>	

\* **Lowest labelled rate:** the minimum labelled rate of the pesticide product for the appropriate site, pest and application method